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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,806	12/19/2001	Peizhong Zheng	35718/241887 (5718-128)	6104
29122	7590	12/19/2003	EXAMINER	
ALSTON & BIRD LLP PIONEER HI-BRED INTERNATIONAL, INC. BANK OF AMERICA PLAZA 101 SOUTH TYRON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			BUI, PHUONG T	
			ART UNIT	PAPER NUMBER
			1638	

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,806	ZHENG ET AL.	
	Examiner	Art Unit	
	Phuong T. Bui	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 12-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7/16/02</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The Office acknowledges the receipt of Applicant's restriction election filed October 30 2003. Applicant elects Group I and invention C (SEQ ID NO:1 encoding SEQ ID NO:2) without traverse. Claims 1-22 are pending. Claims 1-3 and 5-11 (sense orientation, SEQ ID NO:1 encoding SEQ ID NO:2) are examined in the instant application. This restriction is made FINAL.

Claim Objections

2. Claims 1 and 8 are objected to for reciting nonelected inventions, specifically 1(a), 1(b), 1(h), 8(a), 8(b), 8(h), SEQ ID Nos: 3, 5, and 7. Furthermore, "OAR" should be spelled out when it is first used in the claims. Correction is required.

Information Disclosure Statement

3. An initialed and dated copy of Applicant's IDS form 1449, filed July 16, 2002 is attached to the instant Office action.

Claim Rejections - 35 USC § 112, 2nd paragraph

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 and 5-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 8, it is unclear what conditions are "low stringency", as what constitutes "low stringency" to one skilled in the art may be moderate stringency to another. It is suggested the hybridization conditions be specified.

Claims 1(h) and 8(h) are currently not examined as being drawn to nonelected inventions, as these claims recite "antisense". However, complementary sequences may be examined in the instant application if amended without the antisense recitation. If Applicant wishes to include complementary sequences for examination in the instant application, it is suggested that Applicant insert "fully" before "complementary", as "nucleotide sequence" reads on a 2-base sequence, which does not appear to be Applicant's intention.

Correction and/or clarification is required.

Claim Rejections - 35 USC § 112, 1st paragraph

5. Claims 1-3 and 5-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for SEQ ID NO:1 or a polynucleotide sequence encoding SEQ ID NO:2, does not reasonably provide enablement for 15 contiguous bases of SEQ ID NO:1, sequences having 85% sequence identity with SEQ ID NO:1 having OAR (oxoacyl reductase) activity, and 20 nucleotides that hybridize under low stringency with SEQ ID NO:1 having OAR activity. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

In addressing 15 contiguous bases of SEQ ID NO:1, neither Applicant's disclosure nor the state of the art recognize any 15-mer of SEQ ID NO:1 would encode a protein having OAR activity. A 15-mer would encode a polypeptide of five amino acids. Neither Applicant's disclosure nor the state of the prior art provides guidance as to where the catalytic domains necessary for OAR activity are, or that five amino acids

is sufficient to confer OAR activity. Further, it is unpredictable as to which 15-mer would contain the region necessary for OAR activity. Thus, one skilled in the art cannot use any such 15-mer to encode polypeptides having OAR activity without undue experimentation. Furthermore, one skilled in the art would not be able use 15 contiguous nucleotides of SEQ ID NO:1 as primers or probes for SEQ ID NO:1 because they would hybridize to sequences other than SEQ ID NO:1 having no known OAR activity. SEQ ID NO:1 has a poly A tail of 43 A's and thus would hybridize to the complementary sequence of any sequence having a poly A tail. Accordingly, one skilled in the art would not be able to make and use any such 15 contiguous nucleotides of SEQ ID NO:3 without undue experimentation.

Similarly, neither Applicant's disclosure nor the state of the prior art recognizes any 20 nucleotides which hybridize with SEQ ID NO:3 under low stringency hybridization conditions would encode a polypeptide having OAR activity. Again, as indicated above, such 20-mer would encode polypeptides having no known OAR activity. Therefore, one skilled in the art would not be able to make and use any 20 nucleotides which hybridize under low stringency with SEQ ID NO:1 encoding OAR polypeptides without undue experimentation.

In addressing sequences having 85% sequence identity with SEQ ID NO:1, neither Applicant's disclosure nor the state of the prior art teaches which region(s) of SEQ ID NO:1 should be retained for OAR activity, and which would tolerate deletions, additions, and/or substitutions. Applicant provided no working example of any sequences having less than 100% sequence identity with SEQ ID NO:1, or the

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polynucleotide encoding SEQ ID NO:2, which has OAR activity. Accordingly, one skilled in the art cannot make and use sequences having at least 85% sequence identity with SEQ ID NO:1 having OAR activity without undue experimentation.

Claim Rejections - 35 USC § 112, 1st paragraph

6. Claims 1-3 and 5-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **written description** requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims reciting at least 85% sequence identity lack adequate written description because Applicant does not disclose a representative number of species as encompassed by these claims. The claims encompass mutants and allelic variants and thus imply that structural variants exist in nature, yet no structural variant has been disclosed. The claims also encompass OAR polypeptides from other species. The implication is that there is a gene and a protein other than that disclosed which exists in nature, but the structure thereof is not known. Thus, there are insufficient relevant identifying characteristics to allow one skilled in the art to predictably determine such mutants, allelic variants and OAR polypeptides from other plants and organisms, absent further guidance. Accordingly, there is lack of adequate description to inform a skilled artisan that applicant was in possession of the claimed invention at the time of filing. See Written Description guidelines published in Federal Register/ Vol.66, No. 4/ Friday, January 5, 2001/ Notices; p. 1099-1111.

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Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Chalker et al. (USPN 6346395 (A)). Chalker teaches a nucleic acid molecule comprising at least 20 nucleotides which hybridizes under low stringency conditions to SEQ ID NO:1 and encodes a polypeptide having OAR activity. Chalker also teaches expression of OAR in an angiosperm plant (monocot and dicot). Accordingly, Chalker anticipated the claimed invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 5-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Chalker et al. (A) as applied to claims 1-3 and 5-9 above, and further in view of Goodman (USPN 4956282 (B)). The teachings of Chalker have been discussed above. Chalker does not teach the specific plants listed in claim 9 and the transgenic

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seed in claim 10. Goodman teaches expression of heterologous proteins in plants as listed in claim 9 and in transgenic seed (col. 4, lns. 58-61).

It would have been prima facie obvious to one skilled in the art at the time the invention was made to substitute the heterologous protein of Goodman with the OAR protein of Chalker and express OAR in plants and seeds for the purpose of obtaining OAR in any desired host plant such as corn, soybean, etc. as taught by Goodman. One would have been motivated to do so with a reasonable expectation of success.

Remarks

9. No claim is allowed. SEQ ID Nos. 1 and 2 are free of the prior art.

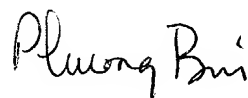
10. Papers relating to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmissions 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Bui whose telephone number is (703) 305-1996.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

Phuong Bui
Primary Examiner
Group Art Unit 1638
December 8, 2003


PHUONG T. BUI
PRIMARY EXAMINER